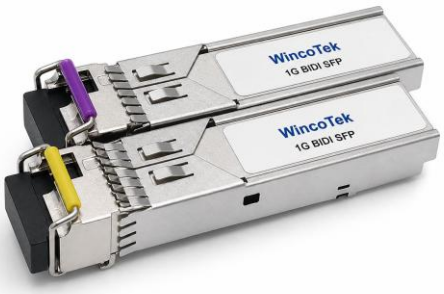
WT54(B45)-K80C(I)

1.25Gb/s T15/R14(T14/R15) 80km DDMI Transceiver

Part Number WT54-K80C	**Data Rate 1.25**	**Wavelength 1550**
Reach 80	**Temperature 0℃~70℃**	



1. Product Overview

Features

- Up to 1.25Gbps Data Links
- 1550nm(1490nm) DFB laser transmitter and PIN/TIA receiver
- Maximum link length of 80km on 9/125um SMF
- Hot-pluggable SFP footprint
- LC receptacles
- Low power dissipation
- RoHS compliant and lead-free
- Support Digital Diagnostic Monitor interface
- Single +3.3V power supply
- Compliant with SFF-8472
- Case operating temperature
- Commercial: 0°C to +70°C

Applications

- Fast Ethernet
- Router/server Interface
- Switch to Switch Interface
- Other Optical Links
- Compliance
- SFP MSA
- SFF-8472
- IEEE802.3z
- ROHS

2. Ordering Information

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance（km）	Fiber Type	DDMI	Connector	Temp
WT54-K80C	1.25	1550	80	SMF	YES	LC	0℃~70℃
WT54-K80I	1.25	1550	80	SMF	YES	LC	-40℃~85℃
WT45-K80C	1.25	1490	80	SMF	YES	LC	0℃~70℃
WT45-K80I	1.25	1490	80	SMF	YES	LC	-40℃~85℃

3. Absolute Maximum Ratings

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Maximum Supply Voltage	Vcc	-0.5		3.6	V	
Storage Temperature	TS	-40		85	℃	1
Relative Humidity	RH	0		85	%	2

4. Recommended Operating Conditions

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Case Operating Temperature	TOP	0		70	℃	Commercial
Case Operating Temperature	TOP	-40		85	℃	Industrial

5. Optical Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Center Wavelength	λc	1540	1550	1560	nm	WT54-K80
Center Wavelength	λc	1480	1490	1500	nm	WT45-K80
Spectral Width(-20dB)	Pm			1	nm	
Side-mode Suppression Ration	SMSR	30			dB	
Average Output Power	Pavg	-2		3	dBm	
Extinction Ratio	ER	9			dB	
Return Loss		12			dB	
Transmitter OFF Output Power	POff			-30	dBm	
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Center Wavelength	λc	1470		1510	nm	WT54-K80
Center Wavelength	λc	1530		1570	nm	WT45-K80
Receiver Sensitivity, Average Power				-24	dBm	
Receiver Saturation Power	Psat			0	dBm	
Loss of Signal Assert	PA	-35			dBm	
Loss of Signal De-assert	PD			-26	dBm	
LOS Hysteresis	PD- PA	0.5			dB	

6. Electrical Characteristics

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Supply Voltage	Vcc	3.135	3.3	3.465	V	
Supply Current	Icc			300	mA	
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Input differential impedance	Rin		100			1
Differential data input swing	Vin, pp	200		1000	mV	

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Transmit Disable Voltage	VD	2		VCC	V	
Transmit Enable Voltage	VEN	Vee		Vee+0.8	V	
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Differential data output swing	Vout, pp	200		1000	mV	2
LOS Fault	VLOS_fault	2		Vcc	V	3
LOS Normal	VLOS_norm	Vee		Vee+0.8	V	3
Power Supply Noise Tolerance	VCCT/VCCR	Per SFP MSA	Per SFP MSA	Per SFP MSA	mVpp	

7. Digital Diagnostics

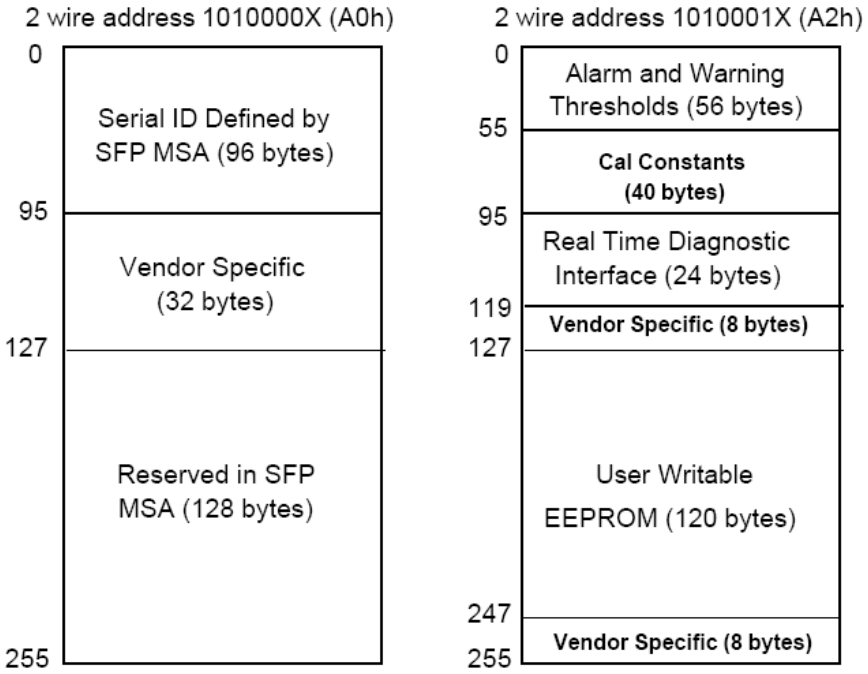
Parameter	Unit	Accuracy
Case Temperature	℃	±3
Supply Voltage	V	±3%
Tx Bias Current	mA	±10%
Tx Optical Power	dB	±3
Rx Optical Power	dB	±3

8. Pin Descriptions

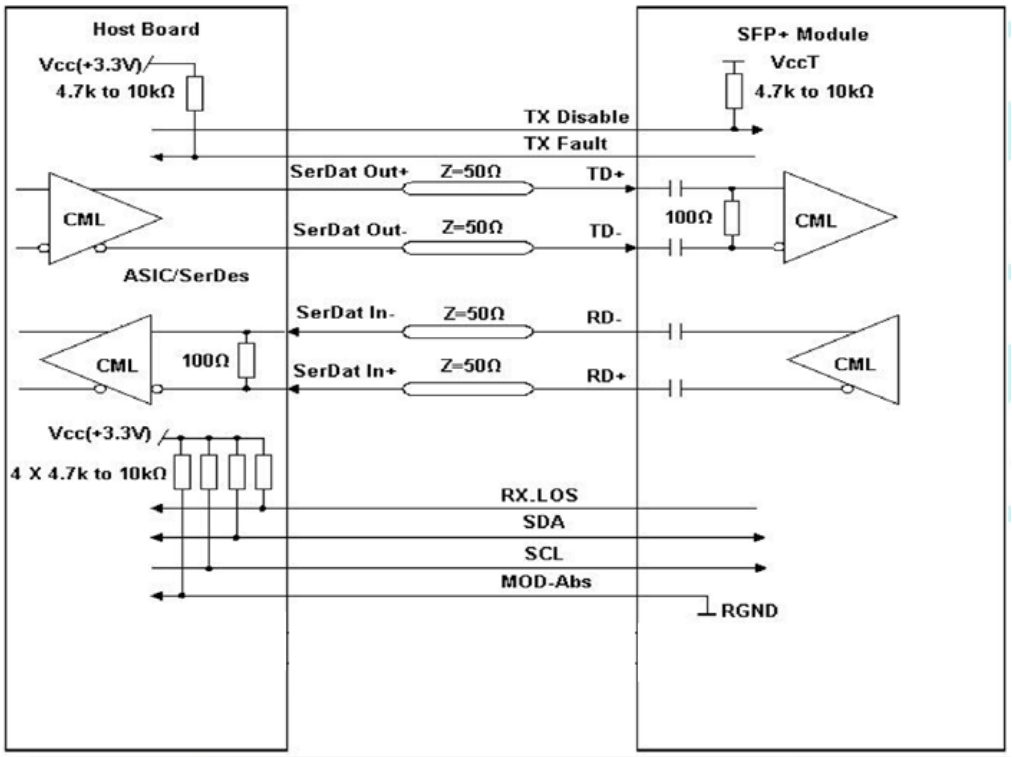
Pin	Symbol	Name/Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault.	2
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	3
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	4
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	4
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	4
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic “0” indicates normal operation.	5
9	VEER	Receiver Ground (Common with Transmitter Ground)	
10	VEER	Receiver Ground (Common with Transmitter Ground)	1
11	VEER	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out (CML). AC Coupled	

Pin	Symbol	Name/Description	Ref.
13	RD+	Receiver Non-inverted DATA out (CML). AC Coupled	
14	VEER	Receiver Ground (Common with Transmitter Ground)	1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	1

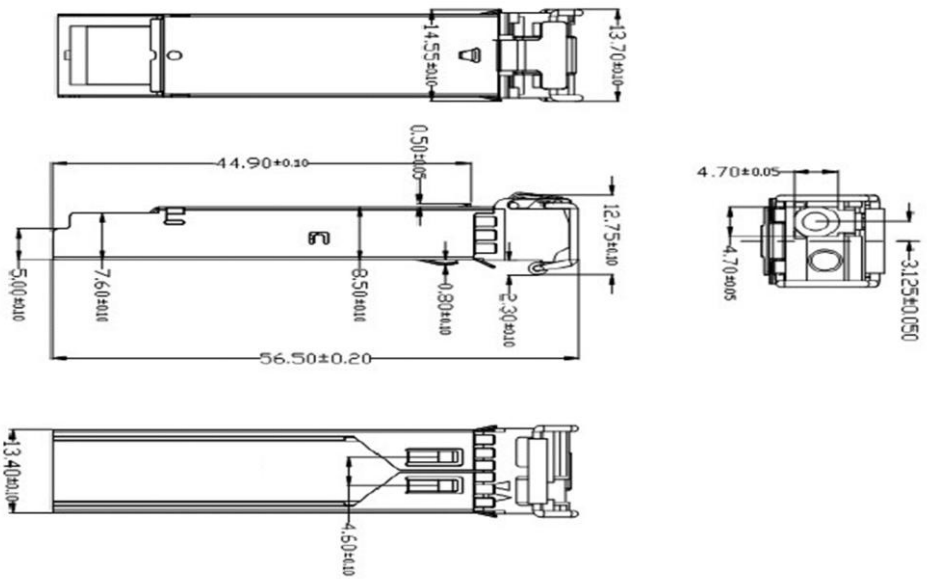
9. Digital Diagnostics Memory Map



10. Recommended Interface Circuit



11. Mechanical Specifications



12. Revision History

Version	Date	Description	Prepared by
V6	2025	Unified WincoTek datasheet format	WincoTek
V6.1	2026-10-23	Engineering and format review	WincoTek